



# Dongfeng Cummins Curve and Datasheet

Engine Model: ISZ450 40

Curve and Datasheet: FR20240



# Dongfeng Cummins Engine Co.,Ltd

Engine Performance Curve FR20240

## EURO 4

**Engine Model:** ISZ450 40

**Advertised Power:** 335 kW @ 2100 rpm

450 HP @ 2100 rpm

**Engine Configuration:** D0C3002BX03

**CPL:** 43354

**Peak Torque:** 2237 N.m @ 1200 rpm

**Displacement:** 13.0 L

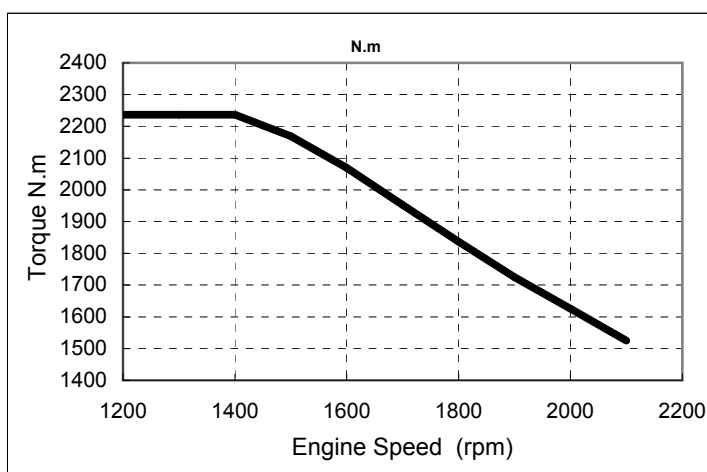
**Cylinders:** 6

**Bore:** 130 mm

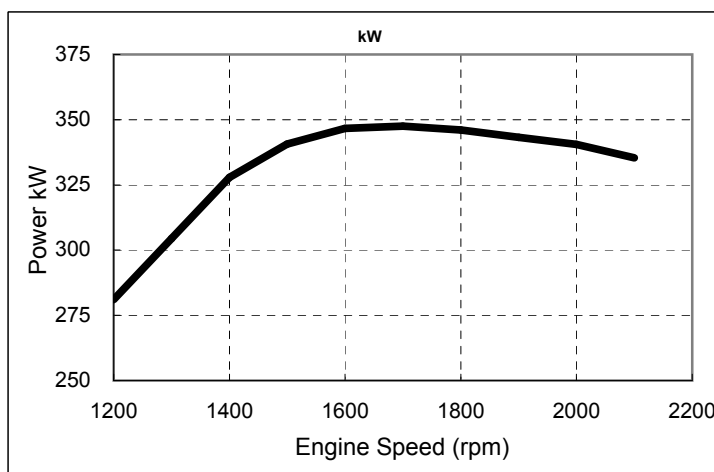
**Stroke:** 163 mm

**Aspiration:** Turbocharged & Charge Air Cooled

**Fuel System:** XPI



Torque	
rpm	N.m
1200	2237
1300	2237
1400	2237
1500	2169
1600	2069
1700	1952
1800	1836
1900	1725
2000	1626
2100	1525



Power	
rpm	kW
1200	281
1300	305
1400	328
1500	341
1600	347
1700	347
1800	346
1900	343
2000	341
2100	335

Curves shown above represent mature gross engine performance capabilities obtained and corrected in accordance with SAE J1349 conditions of 29.61 in Hg (100 kPa) barometric pressure [300 ft (90 m) altitude], 77 deg F (25 deg C) inlet air temperature, and 0.30 in Hg (1 kPa) water vapor pressure with No. 2 diesel fuel.



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### General Engine Data

Certification.....	GB 17691—2005
Compression Ratio: .....	17:1
Approximate Engine Weight - Dry:.....	- kg 1195
Approximate Engine Weight - Wet:.....	- kg 1260
Center of Gravity	
from front face of block:.....	- mm 519
above crankshaft centerline:.....	- mm 201
Maximum static mounting surface bending moment	
Rear face of block:.....	- N•m 1356
Bolt pad for front support:.....	- N•m 678
Maximum crankshaft thrust bearing load limit	
Intermittent load:.....	- N 9786
Continuous load:.....	- N 4893

### Air Intake System

Maximum temperature rise between ambient air and engine air inlet: .....	- °C 11.1
Maximum temperature rise between ambient air and intake manifold: .....	- °C 30
Maximum intake air restriction (heavy duty air cleaner):	
dirty filter: .....	- kPa 6.2
clean filter: .....	- kPa 2.5

### Exhaust System

Max. back pressure imposed by complete exhaust system: .....	- kPa 21
Maximum allowable static bending moment at exhaust outlet flange: .....	- N•m 27
Exhaust pipe size normally acceptable:.....	- mm dia 125

### Electrical System

System voltage: .....	- <u>V</u> <u>24</u>
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### Performance Data

Idle Speed: .....	- rpm 600 - 800
Maximum no load governed speed: .....	- rpm 2300
Maximum over speed capability(15secs max.): .....	- rpm 2625
Maximum altitude for continuous operation: .....	- m 5200
Torque available at clutch engagement: .....	- N.m 1152

### Cold Start Performance

Minimum ambient temperature for unaided cold start: .....	- °C -15
Minimum ambient temperature for aided cold start: .....	- °C -30



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### Cooling System

Maximum allowable pressure drop across charge air cooler and OEM CAC piping: ..... - kPa 10.1

Minimum cooling capability:

Engine out coolant to ambient @ 1,600 RPM: ..... - °C 60.6

Engine out coolant to ambient @ 1,200 RPM: ..... - °C 65.6

Charge air cooler to ambient @ 1,600 RPM: ..... - °C 23.9

Engine Speed RPM	Oil Pressure kPa	Air to Turbo m³/min	Air From Turbo		Exhaust Flow m³/min	Exhaust Temp °C	Fuel Consumption	Coolant Flow l/min	Heat Rejection		Friction Power kW
			Flow kg/min	Pressure kPa					Coolant Kw	Air kW	
2100	276	32.4	37.2	192	66.0	418	73.0	510	148.0	75.0	58.0
1600	259	28.6	33.0	226	61.5	431	69.9	390	134.0	75.0	29.0
1200	248	17.9	21.0	169	47.1	516	55.8	294	122.0	39.0	25.0

All values within ±5%

Base engine data refer to D0C3002BX03

All data subject to change without notice. Dongfeng Cummins Engine Co., Ltd